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ABSTRACT

This Digest reviews what is known from recent research about delivering instruction to young children with disabilities in the natural environment. It notes the endorsement of this practice by the Division for Early Childhood Education of the Council for Exceptional Children. Research is reported which has focused on validating specific natural-environment approaches, including incidental teaching, coincidental teaching, time delay, mand-modeling procedures, activity-based intervention, and milieu teaching. Results have underscored the fact that just using the natural environment is not enough; the procedures that are integrated into the setting must be effective ones. Effective principles include the following: (1) review and reinforce requisite skills; (2) present new material incorporating guided practice; and (3) provide opportunities for maintenance and generalization. Procedural and contextual questions are suggested for practitioners to consider when evaluating a recommended approach. The paper concludes that instruction in natural environments promotes child-focused, age-appropriate target skills and, philosophically, is consistent with inclusionary practices. (DB)

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Early Childhood Instruction in the Natural Environment

Cynthia Warger

Consistent with the concept of education in the least restrictive environment, the IDEA Amendments of 1997 require states to ensure that, to the maximum extent appropriate, early intervention services to infants and toddlers under 3 years of age are provided in natural environments, such as the home and community settings in which children without disabilities participate. Services may be provided elsewhere only if early intervention cannot be achieved in a natural environment (Sec. 303.167(c)). In addition, each individualized family service plan (IFSP) must contain a statement of the natural environments in which services are to be provided and a justification of the extent, if any, to which the services will not be provided in a natural environment (Sec. 303.344(d)(1)(ii)).

In the field, instruction in the natural environment is considered by a growing number of early childhood researchers and practitioners to be an effective approach for delivering interventions to young children with disabilities. Instruction in the natural environment makes use of typically occurring events, activities, and consequences as a context in which to teach specific skills. The instructional context consists of routine events and everyday activities in a variety of settings. Typically, interactions between the child and adult are characterized as following the child's lead or capitalizing on the child's interest and engagement. The consequences of the child's behavior are utilized as reinforcement. Functional skills–particularly language–are a common focus of intervention.

A Recommended Practice

In 1993, the Division for Early Childhood (DEC), of the Council for Exceptional Children identified indicators of quality programs for infants and young children with special needs and their families. DEC espoused the position that effective practices should have a research base that documents positive results for young children with disabilities. They also should reflect program characteristics that are valued by the field, such as

- A family-centered approach
- Compatibility with a multicultural and multiethnic perspective
- Developmentally and individually appropriate practices
- The promotion of a least intrusive approach in normalized settings.

Instruction in the natural environment, along with other curriculum and intervention strategies, was recommended by DEC as an effective practice as shown in the following indicator:

> "Effective curriculum and intervention strategies include milieu strategies (e.g., incidental teaching, mand-model procedure[1], modeling, and naturalistic time delay) that involve brief interactions between adults and children." [Wolery & Sainator, p. 59]

DEC presented the indicators with the hope that educators would find out more about the recommended strategies, know when and how to use them, and know how to make adjustments in their use.

DEC also cautioned that the practices cited in the document should be understood to reflect the state of the art of early intervention as it existed in 1993. The authors encouraged researchers and practitioners to periodically review each recommended practice for validity and soundness.

This digest reviews what we have learned from recent research about delivering instruction in the natural environment. It draws heavily upon research syntheses by Santos and Lignugaris/Kraft (1997) and of Rule, Losardo, Dinnebeil, Kaiser, and Rowland (1998). Practitioners are encouraged to use these findings to enhance their practice when delivering instruction in a natural environment.

Delivering Effective Instruction in the Natural Environment

Much of the research to date has focused on validating specific natural-environment approaches, including incidental teaching, coincidental teaching, time delay, mand-modeling procedures, activity-based intervention, and milieu teaching. The research has focused on interaction formats and instructional strategies that produce successful outcomes when they are integrated into the natural environment. Results have underscored the fact that just using the natural environment is not enough — the procedures that are integrated into the setting also must be effective ones.

For example, in a synthesis of the research, Santos and Lignugaris/Kraft examined 28 studies from an effective teaching perspective–i.e., whether they (a) included instructional plans including goals, objectives, and activities; (b) established a learning set by reviewing earlier materials or assessing prerequisite skills necessary for the day's learning; (c) presented new material and provided guided practice; (d) provided opportunities for independent practice; and (e) monitored and evaluated progress. Overall, the researchers found that effective instruction in natural environments is beneficial to some children, under some conditions, and for some skills. They

identified the following practices as ones that contribute to the success of instruction in natural environments.

- **Review and requisite skills.** Program staff should use a learning set prior to instruction to reinforce requisite skills and build instructional momentum for difficult tasks. The effect of reinforcing performance on known skills may reduce errors and promote the child's interest in the interaction, which ultimately may increase the child's interest and engagement in the activity.

- **Presentation of new material and guided practice.** Higher interaction rates lead to higher levels of task engagement. When presenting new material, adults should ensure that instructional arrangements include situations in which the children must respond (obligatory responding). The adult should move quickly from obligatory to nonobligatory responding so that the child does not learn to depend on the adult's prompt. These instructional arrangements should promote numerous response opportunities with clear criteria for reinforcement.

- **Maintenance and generalization.** Adults should provide opportunities for children to independently use the skills they have acquired. Providing additional opportunities to independently practice newly acquired skills may produce more fluent repertoires of skills that will be maintained and will generalize to new situations, settings, and people.

Applying Naturalistic Instruction Techniques to Practice

In an analysis of the literature on instruction in natural environments, Rule and her colleagues addressed issues raised when procedures are translated from research to practice. They determined that there are many procedural variations in the techniques described in different studies, and it can be difficult to apply the study technique exactly. Rule and her colleagues suggest this may explain why there still remain many unanswered questions about the role that particular adult and child behaviors play in producing desired results.

Program staff need to know what the procedures are and how they should be applied, as well as the level of implementation required to produce the desired outcome. To this end, Rule and her colleagues have provided guidelines that practitioners (and researchers) might use to investigate recommended approaches. Practitioners should ask:

Procedural Factors:

- What is the nature of the target behavior (i.e., the behavior that we want the child to demonstrate)?
- How many target behaviors are to be taught?
- When and how should training trials be introduced?
- Who initiates the teaching transactions?
- What antecedents and consequences should be used?
- What is the role of corrective feedback?

Contextual Features:

- How should the environment be arranged?
- What is the duration and intensity of activities?
- What materials are needed and how should they be selected?

Answers to these questions should facilitate practitioners' efforts to apply research-based procedures to their work.

Summary

Instruction in the natural environment requires significant planning. It should have clear, observable goals and reflect the principles of effective instructional practice. As researcher Steven Warren (1998) reminds us, these procedures "were developed because they can be embedded in the stream of ongoing interaction and can effectively accelerate the development of certain skills if they are used frequently, with fidelity, and within the child's zone of proximal development."

Instruction in natural environments promotes child-focused, age-appropriate target skills. In addition to a growing research base, there is another more basic advantage to using instruction in the natural environment. Philosophically, its use is consistent with inclusionary practices. This is an important consideration, especially since during the 1995-96 school year, 51.6 percent of children ages 3-5 with disabilities were served in regular classes (U.S. Department of Education, 1998), where they are expected to learn daily routines and activities in natural or least restrictive environments.

The natural environment offers practitioners and children a variety of opportunities to teach and learn important skills. Research continues to help ensure that this practice is used to its greatest potential.

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